

and shortly barrel-shaped, and the last is spirally concave or slightly grooved or channelled a little way backwards from the outer lip below the middle. The aperture, both in shape and in the form, size, and proportion of its plaits, differs from that of all the species above mentioned. The umbilicus is moderately large and infundibuliform.

A unique example of this fine new *Pupa*, with the remains of its animal still present in the aperture, was detected by T. Vernon Wollaston, Esq., the well-known explorer of the Atlantic insect fauna, and author of 'Insecta Maderensia,' 'Canariensia,' &c., in a box containing a number of specimens of *P. concinna* Lowe, sent to him from Madeira, about a year ago, by the Baron do Castello de Paiva, and marked "Rib. do Inferno." Though some doubt therefore must necessarily attach to the precise habitat of this particular single specimen, there can be no question whatever, with any one whose eye has become at all versed in the aspect of Madeiran *Pupæ*, as to its having been really collected in the north of the island, and probably in one of the few haunts of *P. concinna*—namely, at the head of the Rib. de João Delgado (not far remote from that of the Rib. do Inferno) or of the Boa Ventura on the north side of the Pico Casado, at a considerable elevation.

This discovery is therefore a fresh instance of the great obligations of naturalists to the indefatigable exertions of the Baron do Castello de Paiva, who, though unhappily precluded by ill health from prosecuting his botanical and zoological researches personally, is yet contributing continually, by his employment or encouragement of others, some new acquisition of interest or importance to the domains of what is now termed, euphemistically, "science."

#### XVIII.—Remarks on the History of *Dreissena polymorpha*.

By Dr. OTTO A. L. MÖRCH.

IN a review of 'The Record of Zoological Literature' (Ann. & Mag. N. Hist. Dec. 1866, p. 494) an extract is given from a critique of Dr. E. von Martens, to the effect that my opinion as to the identity of *Pinna fluviatilis*, Sander, with *Dreissena polymorpha* depends on an analysis of Sander's account and on "the analogous fact that the occurrence of the genus *Unio* in Denmark remained unknown to so careful an observer as O. F. Müller."

This is a mistake. I rely mainly on the facts that Sander refers his shell to the genus *Pinna*, and that he expressly states that his shell is not figured in Schröter's work on freshwater shells,

which contains ten figures of species of the genus *Unio*, including two or three of *U. batavus*. It therefore seems to me impossible that the *Pinna fluviatilis* could be *U. batavus*, as Dr. Gysser supposes.

H. Sander, Professor at the Gymnasium Illustre in Carlsruhe, who died at the early age of twenty-eight, was certainly not a professed conchologist; but several volumes of his sufficiently show that he was a person of unusual intelligence, and had a considerable knowledge of natural history. As he chiefly occupied himself with the fauna of his native country (entirely an inland one), it is not surprising that he regarded *Anodonta* as the type or analogue of *Mytilus*, and that he did not place his new shell in the same genus. After much study, investigation, and comparison, he came to the conclusion that the shell in question must belong to the genus *Pinna* of Linné, to which genus he likewise refers *M. edulis*, having seen the latter during his journey through Belgium. Sander gave his shell the name of *fluviatilis* on account of its having a different habitat from *M. edulis*. *Dreissena* is the only freshwater shell that has any resemblance to *Pinna*. Sander's description relates to the colour only, viz.: outside dark green; inside blue, with yellow stripes ("Streifen"), which, when held towards the light, are iridescent. The last expression is translated by Dr. Gysser as "perlmuttern" (nacreous), although that word is used by Sander in the same page for the inside of *Anodonta*, and not for his shell. The rays in *Unio* are visible mostly on the outside. The fulgurate markings of *Dreissena* are not always present, nor are they easily perceptible in full-grown specimens; but may they not have been meant by "Streifen"? Some specimens are stated by Sander to attain the size of 2 inches (Rhenish?). I have not observed any larger than 45 millims., or nearly  $1\frac{3}{4}$  inch. Perhaps Sander's measurement was taken from memory or judged by the eye. Two inches would not be an extraordinary size for any *Unio* except *U. batavus*; and that size is mentioned by Sander as unusual and only attained in certain specimens.

The disappearance of marine Mollusca from places which they used to inhabit is by no means infrequent: it has been explained by Mr. Jeffreys in his work on British Conchology. Similar instances among the freshwater Mollusca may fairly be presumed. Some years ago, *Limnæa peregra* was common in a small pond in the park of Frederiksberg; it is now no longer to be found there, although other species remain. *Apus productus* is said to have disappeared from places where it was formerly abundant. Dr. von Martens informs me that the water of the little river Alp is very impure, in consequence of its receiving all the drainage of the town of Carlsruhe; Professor Alex. Braun

has only found in it a single plant, a small Alga. This circumstance seems sufficient to account for the disappearance of *Dreissena*. Previous to 1780, Carlsruhe was, no doubt, much smaller than it is at present, and the water was therefore more pure.

It is not impossible that the small rivulet mentioned by Sander may have become, since 1780, unsuitable for the *Dreissena*. Perhaps the quality of the water may have changed, or an increase in the number of water-fowl or fishes may have destroyed the *Dreissena*. Mr. James Bryant, the discoverer of *Dreissena* in England, used it as bait in fishing for perch in the Thames. The circumstance that *Dreissena* has not been observed in the loess of the Rhine is not a proof of its absence from that widespread deposit: I believe neither *Unio* nor *Anodonta* has hitherto been detected in it. Nor, in my opinion, can the silence of writers be regarded as a proof of the non-existence of *Dreissena* in the west of Europe previously to 1824. The freshwater shells were so little investigated before the time of C. Pfeiffer and Rossmässler, that even *Unio tumidus* was not known out of Denmark until 1825. *U. pictorum* and *U. batavus* were chiefly known to Schröter and preceding conchologists from Nuremberg colour-boxes.

The alleged migration of *Dreissena* seems to be rather too sudden, if not too swift. In 1824 it was noticed in the Thames, in 1825 in the Niemen, and in 1826 in the mouth of the Rhine. Its appearance is more like that of *Miastor*, which was first observed at Astrakhan: as soon as the attention of naturalists was called to it, *Miastor* was found in every place where it might be expected to occur. *Dreissena* may owe a great deal of its rapid distribution to commerce, or perhaps to the pontoon-trains of the armies of Napoleon; but I still deny that there is any proof that it was introduced everywhere in this century, principally between the years 1824 and 1828.

### XIX.—On the Menispermaceæ.

By JOHN MIERS, F.R.S., F.L.S. &c.

[Continued from p. 29.]

#### 37. DIPLOCLISIA.

This genus was proposed by me, in 1851, for a small set of plants of which the *Cocculus macrocarpus*, W. & A., is the type. It differs from *Cocculus*, *Nephroica*, and *Holopeira* in habit and the structure of its putamen and seed. These differences are so